

SAFETY DATA SHEET



Lambda ZAP II Predigested Vector Kit, Part Number 236211

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name : Lambda ZAP II Predigested Vector Kit, Part Number 236211
Part no. (chemical kit) : 236211
Part no. : Lambda ZAP II Vector 236211-51
Predigested With EcoR I
pRheo/EcoR I Test Insert 210200-51
XL1-Blue MRF⁺ E.coli 200301-81
Strain
ExAssist Interference- 200253-81
Resistant Helper Phage
SOLR Bacterial Strain 200298-81

1.2 Relevant identified uses of the substance or mixture and uses advised against

Material uses : Analytical reagent.
Lambda ZAP II Vector Predigested With EcoR I 0.01 ml (10 µg 1 µg/µl)
pRheo/EcoR I Test Insert 0.01 ml (1.25 µg 0.25 µg/µl)
XL1-Blue MRF⁺ E.coli Strain 0.5 ml
ExAssist Interference-Resistant Helper Phage 1 ml (>1 x E10 pfu/ml)
SOLR Bacterial Strain 0.5 ml

1.3 Details of the supplier of the safety data sheet

Agilent Technologies Manufacturing GmbH & Co. KG
Hewlett-Packard-Str. 8
76337 Waldbronn
Germany
0800 603 1000

e-mail address of person responsible for this SDS : pdl-msds_author@agilent.com

1.4 Emergency telephone number

Emergency telephone number (with hours of operation) : CHEMTREC®: +(44)-870-8200418

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : Lambda ZAP II Vector Mixture
Predigested With EcoR I
pRheo/EcoR I Test Insert Mixture
XL1-Blue MRF⁺ E.coli Mixture
Strain
ExAssist Interference- Mixture
Resistant Helper Phage
SOLR Bacterial Strain Mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Not classified.

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SECTION 2: Hazards identification

Ingredients of unknown toxicity	: XL1-Blue MRF' E.coli Strain SOLR Bacterial Strain	Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: 10 - 30% Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: 10 - 30%
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See Section 16 for the full text of the H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

Signal word	: Lambda ZAP II Vector Predigested With EcoR I pRho/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference-Resistant Helper Phage SOLR Bacterial Strain	No signal word. No signal word. No signal word. No signal word. No signal word.
Hazard statements	: Lambda ZAP II Vector Predigested With EcoR I pRho/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference-Resistant Helper Phage SOLR Bacterial Strain	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.

Precautionary statements

Prevention	: Lambda ZAP II Vector Predigested With EcoR I pRho/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference-Resistant Helper Phage SOLR Bacterial Strain	Not applicable. Not applicable. Not applicable. Not applicable.
Response	: Lambda ZAP II Vector Predigested With EcoR I pRho/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference-Resistant Helper Phage SOLR Bacterial Strain	Not applicable. Not applicable. Not applicable. Not applicable.
Storage	: Lambda ZAP II Vector Predigested With EcoR I pRho/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference-Resistant Helper Phage SOLR Bacterial Strain	Not applicable. Not applicable. Not applicable. Not applicable.
Disposal	: Lambda ZAP II Vector Predigested With EcoR I pRho/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference-Resistant Helper Phage SOLR Bacterial Strain	Not applicable. Not applicable. Not applicable. Not applicable.

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SECTION 2: Hazards identification

Hazardous ingredients	: XL1-Blue MRF' E.coli Strain	Not applicable.
	SOLR Bacterial Strain	Not applicable.
Supplemental label elements	: Lambda ZAP II Vector	Not applicable.
	Predigested With EcoR I	Not applicable.
	pRheo/EcoR I Test Insert	Not applicable.
	XL1-Blue MRF' E.coli Strain	Safety data sheet available on request.
	ExAssist Interference-Resistant Helper Phage	Not applicable.
	SOLR Bacterial Strain	Safety data sheet available on request.
Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles	: Lambda ZAP II Vector	Not applicable.
	Predigested With EcoR I	Not applicable.
	pRheo/EcoR I Test Insert	Not applicable.
	XL1-Blue MRF' E.coli Strain	Not applicable.
	ExAssist Interference-Resistant Helper Phage	Not applicable.
	SOLR Bacterial Strain	Not applicable.
Special packaging requirements		
Tactile warning of danger	: Lambda ZAP II Vector	Not applicable.
	Predigested With EcoR I	Not applicable.
	pRheo/EcoR I Test Insert	Not applicable.
	XL1-Blue MRF' E.coli Strain	Not applicable.
	ExAssist Interference-Resistant Helper Phage	Not applicable.
	SOLR Bacterial Strain	Not applicable.

2.3 Other hazards

Other hazards which do not result in classification	: Lambda ZAP II Vector	None known.
	Predigested With EcoR I	None known.
	pRheo/EcoR I Test Insert	None known.
	XL1-Blue MRF' E.coli Strain	None known.
	ExAssist Interference-Resistant Helper Phage	None known.
	SOLR Bacterial Strain	None known.

SECTION 3: Composition/information on ingredients

3.1 Substances	: <input checked="" type="checkbox"/> Lambda ZAP II Vector	Mixture
	Predigested With EcoR I	Mixture
	pRheo/EcoR I Test Insert	Mixture
	XL1-Blue MRF' E.coli Strain	Mixture
	ExAssist Interference-Resistant Helper Phage	Mixture
	SOLR Bacterial Strain	Mixture

Product/ingredient name	Identifiers	%	Regulation (EC) No. 1272/2008 [CLP]	Type
<input checked="" type="checkbox"/> XL1-Blue MRF' E.coli Strain	REACH #: Annex V	≥10 - ≤25	Not classified.	[2]
Glycerol	EC: 200-289-5			
Sodium chloride	CAS: 56-81-5	≤3	Eye Irrit. 2, H319	[1]
	EC: 231-598-3			
	CAS: 7647-14-5			
SOLR Bacterial Strain	REACH #: Annex V	≥10 - ≤25	Not classified.	[2]
Glycerol				

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SECTION 3: Composition/information on ingredients

Sodium chloride	EC: 200-289-5 CAS: 56-81-5 EC: 231-598-3 CAS: 7647-14-5	≤3	Eye Irrit. 2, H319 See Section 16 for the full text of the H statements declared above.	[1]
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There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Type

- [1] Substance classified with a health or environmental hazard
- [2] Substance with a workplace exposure limit
- [3] Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII
- [4] Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII
- [5] Substance of equivalent concern
- [6] Additional disclosure due to company policy

SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact	: Lambda ZAP II Vector Predigested With EcoR I pRheo/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference-Resistant Helper Phage SOLR Bacterial Strain	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
Inhalation	: Lambda ZAP II Vector Predigested With EcoR I pRheo/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference-Resistant Helper Phage SOLR Bacterial Strain	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
Skin contact	: Lambda ZAP II Vector Predigested With EcoR I pRheo/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference-	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Flush contaminated skin with plenty of water. Remove

SECTION 4: First aid measures

	Resistant Helper Phage	contaminated clothing and shoes. Get medical attention if symptoms occur.
	SOLR Bacterial Strain	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
Ingestion	: Lambda ZAP II Vector Predigested With EcoR I	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
	pRho/EcoR I Test Insert	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
	XL1-Blue MRF' E.coli Strain	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
	ExAssist Interference-Resistant Helper Phage	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
	SOLR Bacterial Strain	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
Protection of first-aiders	: Lambda ZAP II Vector Predigested With EcoR I	No action shall be taken involving any personal risk or without suitable training.
	pRho/EcoR I Test Insert	No action shall be taken involving any personal risk or without suitable training.
	XL1-Blue MRF' E.coli Strain	No action shall be taken involving any personal risk or without suitable training.
	ExAssist Interference-Resistant Helper Phage	No action shall be taken involving any personal risk or without suitable training.
	SOLR Bacterial Strain	No action shall be taken involving any personal risk or without suitable training.

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

Eye contact	: Lambda ZAP II Vector Predigested With EcoR I	No known significant effects or critical hazards.
	pRho/EcoR I Test Insert	No known significant effects or critical hazards.
	XL1-Blue MRF' E.coli Strain	No known significant effects or critical hazards.
	ExAssist Interference-Resistant Helper Phage	No known significant effects or critical hazards.
	SOLR Bacterial Strain	No known significant effects or critical hazards.

SECTION 4: First aid measures

Inhalation	:	Lambda ZAP II Vector	No known significant effects or critical hazards.
		Predigested With EcoR I	
		pRheo/EcoR I Test Insert	No known significant effects or critical hazards.
		XL1-Blue MRF' E.coli Strain	No known significant effects or critical hazards.
Skin contact	:	ExAssist Interference-Resistant Helper Phage SOLR Bacterial Strain	No known significant effects or critical hazards.
		Lambda ZAP II Vector	No known significant effects or critical hazards.
		Predigested With EcoR I	
		pRheo/EcoR I Test Insert	No known significant effects or critical hazards.
Ingestion	:	XL1-Blue MRF' E.coli Strain	No known significant effects or critical hazards.
		ExAssist Interference-Resistant Helper Phage SOLR Bacterial Strain	No known significant effects or critical hazards.
		Lambda ZAP II Vector	No known significant effects or critical hazards.
		Predigested With EcoR I	

Over-exposure signs/symptoms

Eye contact	:	Lambda ZAP II Vector	No specific data.
		Predigested With EcoR I	
		pRheo/EcoR I Test Insert	No specific data.
		XL1-Blue MRF' E.coli Strain	No specific data.
Inhalation	:	ExAssist Interference-Resistant Helper Phage SOLR Bacterial Strain	No specific data.
		Lambda ZAP II Vector	No specific data.
		Predigested With EcoR I	
		pRheo/EcoR I Test Insert	No specific data.
Skin contact	:	XL1-Blue MRF' E.coli Strain	No specific data.
		ExAssist Interference-Resistant Helper Phage SOLR Bacterial Strain	No specific data.
		Lambda ZAP II Vector	No specific data.
		Predigested With EcoR I	
Ingestion	:	pRheo/EcoR I Test Insert	No specific data.
		XL1-Blue MRF' E.coli Strain	No specific data.
		ExAssist Interference-Resistant Helper Phage SOLR Bacterial Strain	No specific data.
		Lambda ZAP II Vector	No specific data.

4.3 Indication of any immediate medical attention and special treatment needed

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SECTION 4: First aid measures

Notes to physician	: Lambda ZAP II Vector Predigested With EcoR I pRho/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference-Resistant Helper Phage SOLR Bacterial Strain	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments	: Lambda ZAP II Vector Predigested With EcoR I pRho/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference-Resistant Helper Phage SOLR Bacterial Strain	No specific treatment. No specific treatment. No specific treatment. No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	: Lambda ZAP II Vector Predigested With EcoR I pRho/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference-Resistant Helper Phage SOLR Bacterial Strain	Use an extinguishing agent suitable for the surrounding fire. Use an extinguishing agent suitable for the surrounding fire. Use an extinguishing agent suitable for the surrounding fire. Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media	: Lambda ZAP II Vector Predigested With EcoR I pRho/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference-Resistant Helper Phage SOLR Bacterial Strain	None known. None known. None known. None known.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture	: Lambda ZAP II Vector Predigested With EcoR I pRho/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference-Resistant Helper Phage SOLR Bacterial Strain	In a fire or if heated, a pressure increase will occur and the container may burst. In a fire or if heated, a pressure increase will occur and the container may burst. In a fire or if heated, a pressure increase will occur and the container may burst. In a fire or if heated, a pressure increase will occur and the container may burst. In a fire or if heated, a pressure increase will occur and the container may burst.
Hazardous combustion products	: Lambda ZAP II Vector Predigested With EcoR I pRho/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference-Resistant Helper Phage	No specific data. No specific data. Decomposition products may include the following materials: carbon dioxide carbon monoxide halogenated compounds metal oxide/oxides No specific data.

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SOLR Bacterial Strain	Decomposition products may include the following materials: carbon dioxide carbon monoxide halogenated compounds metal oxide/oxides
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5.3 Advice for firefighters

Special precautions for fire-fighters

: Lambda ZAP II Vector Predigested With EcoR I	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
pRheo/EcoR I Test Insert	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
XL1-Blue MRF' E.coli Strain	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
ExAssist Interference-Resistant Helper Phage	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
SOLR Bacterial Strain	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters

: Lambda ZAP II Vector Predigested With EcoR I	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
pRheo/EcoR I Test Insert	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
XL1-Blue MRF' E.coli Strain	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
ExAssist Interference-Resistant Helper Phage	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
SOLR Bacterial Strain	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	: Lambda ZAP II Vector Predigested With EcoR I	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.
	pRheo/EcoR I Test Insert	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.
	XL1-Blue MRF' E.coli Strain	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.
	ExAssist Interference-Resistant Helper Phage	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.
	SOLR Bacterial Strain	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.
For emergency responders	: Lambda ZAP II Vector Predigested With EcoR I	If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
	pRheo/EcoR I Test Insert	If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
	XL1-Blue MRF' E.coli Strain	If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
	ExAssist Interference-Resistant Helper Phage	If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
	SOLR Bacterial Strain	If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
6.2 Environmental precautions	: Lambda ZAP II Vector Predigested With EcoR I	Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
	pRheo/EcoR I Test Insert	Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
	XL1-Blue MRF' E.coli Strain	Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
	ExAssist Interference-	Avoid dispersal of spilt material and runoff and contact with

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SECTION 6: Accidental release measures

Resistant Helper Phage	soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
SOLR Bacterial Strain	Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6.3 Methods and material for containment and cleaning up

Methods for cleaning up	:	Lambda ZAP II Vector Predigested With EcoR I	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
		pRheo/EcoR I Test Insert	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
		XL1-Blue MRF' E.coli Strain	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
		ExAssist Interference-Resistant Helper Phage	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
		SOLR Bacterial Strain	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

6.4 Reference to other sections : See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Protective measures	:	Lambda ZAP II Vector Predigested With EcoR I	Put on appropriate personal protective equipment (see Section 8).
		pRheo/EcoR I Test Insert	Put on appropriate personal protective equipment (see Section 8).
		XL1-Blue MRF' E.coli Strain	Put on appropriate personal protective equipment (see Section 8).
		ExAssist Interference-Resistant Helper Phage	Put on appropriate personal protective equipment (see Section 8).
		SOLR Bacterial Strain	Put on appropriate personal protective equipment (see Section 8).
Advice on general occupational hygiene	:	Lambda ZAP II Vector Predigested With EcoR I	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
		pRheo/EcoR I Test Insert	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed.

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XL1-Blue MRF' E.coli Strain	Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures. Potentially biohazardous material. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
ExAssist Interference-Resistant Helper Phage	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
SOLR Bacterial Strain	Potentially biohazardous material. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

Storage

: Lambda ZAP II Vector Predigested With EcoR I	Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
pRho/EcoR I Test Insert	Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
XL1-Blue MRF' E.coli Strain	Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
ExAssist Interference-Resistant Helper Phage	Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have

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SECTION 7: Handling and storage

SOLR Bacterial Strain

been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

7.3 Specific end use(s)

Recommendations	: Lambda ZAP II Vector Predigested With EcoR I pRho/EcoR I Test Insert XL1-Blue MRF' E.coli Strain	Industrial applications, Professional applications.
	ExAssist Interference-Resistant Helper Phage	Industrial applications, Professional applications.
	SOLR Bacterial Strain	Industrial applications, Professional applications.
Industrial sector specific solutions	: Lambda ZAP II Vector Predigested With EcoR I pRho/EcoR I Test Insert XL1-Blue MRF' E.coli Strain	Not applicable.
	ExAssist Interference-Resistant Helper Phage	Not applicable.
	SOLR Bacterial Strain	Not applicable.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

Product/ingredient name	Exposure limit values
XL1-Blue MRF' E.coli Strain Glycerol	EH40/2005 WELs (United Kingdom (UK), 12/2011). TWA: 10 mg/m ³ 8 hours. Form: Mist
SOLR Bacterial Strain Glycerol	EH40/2005 WELs (United Kingdom (UK), 12/2011). TWA: 10 mg/m ³ 8 hours. Form: Mist

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

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SECTION 8: Exposure controls/personal protection

DNELs/DMELs

No DNELs/DMELs available.

PNECs

No PNECs available

8.2 Exposure controls

Appropriate engineering controls : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Individual protection measures

Hygiene measures : Handle as biohazard material (Biosafety level 1). Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state	:	Lambda ZAP II Vector Predigested With EcoR I pRho/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference- Resistant Helper Phage SOLR Bacterial Strain	Liquid. Liquid. Liquid. Liquid. Liquid.
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SECTION 9: Physical and chemical properties

Colour	: Lambda ZAP II Vector Predigested With EcoR I	Not available.
	pRho/EcoR I Test Insert	Not available.
	XL1-Blue MRF' E.coli Strain	Not available.
	ExAssist Interference-Resistant Helper Phage	Not available.
	SOLR Bacterial Strain	Not available.
Odour	: Lambda ZAP II Vector Predigested With EcoR I	Not available.
	pRho/EcoR I Test Insert	Not available.
	XL1-Blue MRF' E.coli Strain	Not available.
	ExAssist Interference-Resistant Helper Phage	Not available.
	SOLR Bacterial Strain	Not available.
Odour threshold	: Lambda ZAP II Vector Predigested With EcoR I	Not available.
	pRho/EcoR I Test Insert	Not available.
	XL1-Blue MRF' E.coli Strain	Not available.
	ExAssist Interference-Resistant Helper Phage	Not available.
	SOLR Bacterial Strain	Not available.
pH	: Lambda ZAP II Vector Predigested With EcoR I	7.5
	pRho/EcoR I Test Insert	7.5
	XL1-Blue MRF' E.coli Strain	7
	ExAssist Interference-Resistant Helper Phage	7.5
	SOLR Bacterial Strain	7
Melting point/freezing point	: Lambda ZAP II Vector Predigested With EcoR I	0°C
	pRho/EcoR I Test Insert	0°C
	XL1-Blue MRF' E.coli Strain	Not available.
	ExAssist Interference-Resistant Helper Phage	0°C
	SOLR Bacterial Strain	Not available.
Initial boiling point and boiling range	: Lambda ZAP II Vector Predigested With EcoR I	100°C
	pRho/EcoR I Test Insert	100°C
	XL1-Blue MRF' E.coli Strain	Not available.
	ExAssist Interference-Resistant Helper Phage	100°C
	SOLR Bacterial Strain	Not available.

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SECTION 9: Physical and chemical properties

Flash point	: Lambda ZAP II Vector Predigested With EcoR I pRheo/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference-Resistant Helper Phage SOLR Bacterial Strain	Not available. Not available. Not available. Not available. Not available.
Evaporation rate	: Lambda ZAP II Vector Predigested With EcoR I pRheo/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference-Resistant Helper Phage SOLR Bacterial Strain	Not available. Not available. Not available. Not available. Not available.
Flammability (solid, gas)	: Lambda ZAP II Vector Predigested With EcoR I pRheo/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference-Resistant Helper Phage SOLR Bacterial Strain	Not applicable. Not applicable. Not applicable. Not applicable. Not applicable.
Upper/lower flammability or explosive limits	: Lambda ZAP II Vector Predigested With EcoR I pRheo/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference-Resistant Helper Phage SOLR Bacterial Strain	Not available. Not available. Not available. Not available. Not available.
Vapour pressure	: Lambda ZAP II Vector Predigested With EcoR I pRheo/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference-Resistant Helper Phage SOLR Bacterial Strain	Not available. Not available. Not available. Not available. Not available.
Vapour density	: Lambda ZAP II Vector Predigested With EcoR I pRheo/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference-Resistant Helper Phage	Not available. Not available. Not available. Not available.

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SECTION 9: Physical and chemical properties

	SOLR Bacterial Strain	Not available.
Relative density	: Lambda ZAP II Vector Predigested With EcoR I	Not available.
	pRheo/EcoR I Test Insert	Not available.
	XL1-Blue MRF' E.coli Strain	Not available.
	ExAssist Interference-Resistant Helper Phage	Not available.
Solubility(ies)	: Lambda ZAP II Vector Predigested With EcoR I	Not available.
	pRheo/EcoR I Test Insert	Easily soluble in the following materials: cold water and hot water.
	XL1-Blue MRF' E.coli Strain	Easily soluble in the following materials: cold water and hot water.
	ExAssist Interference-Resistant Helper Phage	Soluble in the following materials: cold water and hot water.
	SOLR Bacterial Strain	Easily soluble in the following materials: cold water and hot water.
Partition coefficient: n-octanol/water	: Lambda ZAP II Vector Predigested With EcoR I	Not available.
	pRheo/EcoR I Test Insert	Not available.
	XL1-Blue MRF' E.coli Strain	Not available.
	ExAssist Interference-Resistant Helper Phage	Not available.
Auto-ignition temperature	: Lambda ZAP II Vector Predigested With EcoR I	Not available.
	pRheo/EcoR I Test Insert	Not available.
	XL1-Blue MRF' E.coli Strain	Not available.
	ExAssist Interference-Resistant Helper Phage	Not available.
Decomposition temperature	: Lambda ZAP II Vector Predigested With EcoR I	Not available.
	pRheo/EcoR I Test Insert	Not available.
	XL1-Blue MRF' E.coli Strain	Not available.
	ExAssist Interference-Resistant Helper Phage	Not available.
Viscosity	: Lambda ZAP II Vector Predigested With EcoR I	Not available.
	pRheo/EcoR I Test Insert	Not available.
	XL1-Blue MRF' E.coli Strain	Not available.
	ExAssist Interference-	Not available.

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SECTION 9: Physical and chemical properties

	Resistant Helper Phage	
	SOLR Bacterial Strain	Not available.
Explosive properties	: Lambda ZAP II Vector	Not available.
	Predigested With EcoR I	
	pRho/EcoR I Test Insert	Not available.
	XL1-Blue MRF' E.coli Strain	Not available.
	ExAssist Interference-Resistant Helper Phage	Not available.
	SOLR Bacterial Strain	Not available.
Oxidising properties	: Lambda ZAP II Vector	Not available.
	Predigested With EcoR I	
	pRho/EcoR I Test Insert	Not available.
	XL1-Blue MRF' E.coli Strain	Not available.
	ExAssist Interference-Resistant Helper Phage	Not available.
	SOLR Bacterial Strain	Not available.

9.2 Other information

No additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity	: Lambda ZAP II Vector	No specific test data related to reactivity available for this product or its ingredients.
	Predigested With EcoR I	
	pRho/EcoR I Test Insert	No specific test data related to reactivity available for this product or its ingredients.
	XL1-Blue MRF' E.coli Strain	No specific test data related to reactivity available for this product or its ingredients.
	ExAssist Interference-Resistant Helper Phage	No specific test data related to reactivity available for this product or its ingredients.
	SOLR Bacterial Strain	No specific test data related to reactivity available for this product or its ingredients.
10.2 Chemical stability	: Lambda ZAP II Vector	The product is stable.
	Predigested With EcoR I	
	pRho/EcoR I Test Insert	The product is stable.
	XL1-Blue MRF' E.coli Strain	The product is stable.
	ExAssist Interference-Resistant Helper Phage	The product is stable.
	SOLR Bacterial Strain	The product is stable.
10.3 Possibility of hazardous reactions	: Lambda ZAP II Vector	Under normal conditions of storage and use, hazardous reactions will not occur.
	Predigested With EcoR I	
	pRho/EcoR I Test Insert	Under normal conditions of storage and use, hazardous reactions will not occur.
	XL1-Blue MRF' E.coli Strain	Under normal conditions of storage and use, hazardous reactions will not occur.
	ExAssist Interference-Resistant Helper Phage	Under normal conditions of storage and use, hazardous reactions will not occur.
	SOLR Bacterial Strain	Under normal conditions of storage and use, hazardous reactions will not occur.

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SECTION 10: Stability and reactivity

- 10.4 Conditions to avoid** : Lambda ZAP II Vector No specific data.
 Predigested With EcoR I
 pRho/EcoR I Test Insert No specific data.
 XL1-Blue MRF' E.coli No specific data.
 Strain
 ExAssist Interference- No specific data.
 Resistant Helper Phage
 SOLR Bacterial Strain No specific data.
- 10.5 Incompatible materials** : Lambda ZAP II Vector May react or be incompatible with oxidising materials.
 Predigested With EcoR I
 pRho/EcoR I Test Insert May react or be incompatible with oxidising materials.
 XL1-Blue MRF' E.coli May react or be incompatible with oxidising materials.
 Strain
 ExAssist Interference- May react or be incompatible with oxidising materials.
 Resistant Helper Phage
 SOLR Bacterial Strain May react or be incompatible with oxidising materials.
- 10.6 Hazardous decomposition products** : Lambda ZAP II Vector Under normal conditions of storage and use, hazardous decomposition products should not be produced.
 Predigested With EcoR I Under normal conditions of storage and use, hazardous decomposition products should not be produced.
 pRho/EcoR I Test Insert Under normal conditions of storage and use, hazardous decomposition products should not be produced.
 XL1-Blue MRF' E.coli Under normal conditions of storage and use, hazardous decomposition products should not be produced.
 Strain
 ExAssist Interference- Under normal conditions of storage and use, hazardous decomposition products should not be produced.
 Resistant Helper Phage
 SOLR Bacterial Strain Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
XL1-Blue MRF' E.coli Strain Sodium chloride	LD50 Oral	Rat	3000 mg/kg	-
SOLR Bacterial Strain Sodium chloride	LD50 Oral	Rat	3000 mg/kg	-

Acute toxicity estimates

Not available.

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
XL1-Blue MRF' E.coli Strain Sodium chloride	Eyes - Moderate irritant	Rabbit	-	24 hours 100 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	10 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
SOLR Bacterial Strain Sodium chloride	Eyes - Moderate irritant	Rabbit	-	24 hours 100 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	10 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-

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SECTION 11: Toxicological information

Sensitiser

Conclusion/Summary : Not available.

Mutagenicity

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : Not available.

Reproductive toxicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on likely routes of exposure

: Lambda ZAP II Vector	Not available.
Predigested With EcoR I	
pRho/EcoR I Test Insert	Not available.
XL1-Blue MRF' E.coli	Routes of entry anticipated: Oral, Dermal, Inhalation.
Strain	
ExAssist Interference-	Not available.
Resistant Helper Phage	
SOLR Bacterial Strain	Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

Inhalation	: Lambda ZAP II Vector	No known significant effects or critical hazards.
	Predigested With EcoR I	
	pRho/EcoR I Test Insert	No known significant effects or critical hazards.
	XL1-Blue MRF' E.coli	No known significant effects or critical hazards.
	Strain	
	ExAssist Interference-	No known significant effects or critical hazards.
	Resistant Helper Phage	
	SOLR Bacterial Strain	No known significant effects or critical hazards.
Ingestion	: Lambda ZAP II Vector	No known significant effects or critical hazards.
	Predigested With EcoR I	
	pRho/EcoR I Test Insert	No known significant effects or critical hazards.
	XL1-Blue MRF' E.coli	No known significant effects or critical hazards.
	Strain	
	ExAssist Interference-	No known significant effects or critical hazards.
	Resistant Helper Phage	
	SOLR Bacterial Strain	No known significant effects or critical hazards.
Skin contact	: Lambda ZAP II Vector	No known significant effects or critical hazards.
	Predigested With EcoR I	
	pRho/EcoR I Test Insert	No known significant effects or critical hazards.
	XL1-Blue MRF' E.coli	No known significant effects or critical hazards.
	Strain	
	ExAssist Interference-	No known significant effects or critical hazards.
	Resistant Helper Phage	
	SOLR Bacterial Strain	No known significant effects or critical hazards.

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SECTION 11: Toxicological information

Eye contact	: Lambda ZAP II Vector Predigested With EcoR I	No known significant effects or critical hazards.
	pRheo/EcoR I Test Insert	No known significant effects or critical hazards.
	XL1-Blue MRF' E.coli Strain	No known significant effects or critical hazards.
	ExAssist Interference-Resistant Helper Phage	No known significant effects or critical hazards.
	SOLR Bacterial Strain	No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation	: Lambda ZAP II Vector Predigested With EcoR I	No specific data.
	pRheo/EcoR I Test Insert	No specific data.
	XL1-Blue MRF' E.coli Strain	No specific data.
	ExAssist Interference-Resistant Helper Phage	No specific data.
	SOLR Bacterial Strain	No specific data.
Ingestion	: Lambda ZAP II Vector Predigested With EcoR I	No specific data.
	pRheo/EcoR I Test Insert	No specific data.
	XL1-Blue MRF' E.coli Strain	No specific data.
	ExAssist Interference-Resistant Helper Phage	No specific data.
	SOLR Bacterial Strain	No specific data.
Skin contact	: Lambda ZAP II Vector Predigested With EcoR I	No specific data.
	pRheo/EcoR I Test Insert	No specific data.
	XL1-Blue MRF' E.coli Strain	No specific data.
	ExAssist Interference-Resistant Helper Phage	No specific data.
	SOLR Bacterial Strain	No specific data.
Eye contact	: Lambda ZAP II Vector Predigested With EcoR I	No specific data.
	pRheo/EcoR I Test Insert	No specific data.
	XL1-Blue MRF' E.coli Strain	No specific data.
	ExAssist Interference-Resistant Helper Phage	No specific data.
	SOLR Bacterial Strain	No specific data.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

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SECTION 11: Toxicological information

General	: Lambda ZAP II Vector Predigested With EcoR I pRheo/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference- Resistant Helper Phage SOLR Bacterial Strain	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
Carcinogenicity	: Lambda ZAP II Vector Predigested With EcoR I pRheo/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference- Resistant Helper Phage SOLR Bacterial Strain	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
Mutagenicity	: Lambda ZAP II Vector Predigested With EcoR I pRheo/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference- Resistant Helper Phage SOLR Bacterial Strain	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
Teratogenicity	: Lambda ZAP II Vector Predigested With EcoR I pRheo/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference- Resistant Helper Phage SOLR Bacterial Strain	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
Developmental effects	: Lambda ZAP II Vector Predigested With EcoR I pRheo/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference- Resistant Helper Phage SOLR Bacterial Strain	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
Fertility effects	: Lambda ZAP II Vector Predigested With EcoR I pRheo/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference- Resistant Helper Phage SOLR Bacterial Strain	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.

SECTION 12: Ecological information

12.1 Toxicity

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SECTION 12: Ecological information

Product/ingredient name	Result	Species	Exposure
XL1-Blue MRF' E.coli Strain Sodium chloride	Acute EC50 4.74 g/L Fresh water	Algae - Chlamydomonas reinhardtii	96 hours
	Acute EC50 519.6 mg/l Fresh water	Crustaceans - Cypris subglobosa	48 hours
	Acute EC50 402600 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute IC50 6.87 g/L Fresh water	Aquatic plants - Lemna minor	96 hours
	Acute LC50 1000000 µg/l Fresh water	Fish - Morone saxatilis - Larvae	96 hours
	Chronic LC10 781 mg/l Fresh water	Crustaceans - Hyalella azteca - Juvenile (Fledgling, Hatchling, Weanling)	3 weeks
	Chronic NOEC 6 g/L Fresh water	Aquatic plants - Lemna minor	96 hours
SOLR Bacterial Strain Sodium chloride	Chronic NOEC 0.314 g/L Fresh water	Daphnia - Daphnia pulex	21 days
	Chronic NOEC 100 mg/l Fresh water	Fish - Gambusia holbrooki - Adult	8 weeks
	Acute EC50 4.74 g/L Fresh water	Algae - Chlamydomonas reinhardtii	96 hours
	Acute EC50 519.6 mg/l Fresh water	Crustaceans - Cypris subglobosa	48 hours
	Acute EC50 402600 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute IC50 6.87 g/L Fresh water	Aquatic plants - Lemna minor	96 hours
	Acute LC50 1000000 µg/l Fresh water	Fish - Morone saxatilis - Larvae	96 hours
Chronic LC10 781 mg/l Fresh water	Crustaceans - Hyalella azteca - Juvenile (Fledgling, Hatchling, Weanling)	3 weeks	
	Aquatic plants - Lemna minor	96 hours	
	Daphnia - Daphnia pulex	21 days	
	Fish - Gambusia holbrooki - Adult	8 weeks	

12.2 Persistence and degradability

Not available.

12.3 Bioaccumulative potential

Not available.

12.4 Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Mobility : Not available.

12.5 Results of PBT and vPvB assessment

PBT : Not applicable.

vPvB : Not applicable.

12.6 Other adverse effects : No known significant effects or critical hazards.

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SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

Hazardous waste : Within the present knowledge of the supplier, this product is not regarded as hazardous waste, as defined by EU Directive 2008/98/EC.

Packaging

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Special precautions : This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

ADR/RID / IMDG / IATA : Not regulated.

14.6 Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code : Not available.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorisation

Annex XIV

None of the components are listed.

Substances of very high concern

None of the components are listed.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles	: Lambda ZAP II Vector Predigested With EcoR I pRheo/EcoR I Test Insert XL1-Blue MRF ⁺ E.coli Strain ExAssist Interference-Resistant Helper Phage SOLR Bacterial Strain	Not applicable. Not applicable. Not applicable. Not applicable. Not applicable.
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Other EU regulations

Ozone depleting substances (1005/2009/EU)

Not listed.

Prior Informed Consent (PIC) (649/2012/EU)

Not listed.

Seveso Directive

This product is not controlled under the Seveso Directive.

International regulations

Date of issue/Date of revision : 23/08/2018

23/25

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SECTION 15: Regulatory information

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol (Annexes A, B, C, E)

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

Australia	: Not determined.
Canada	: Not determined.
China	: Not determined.
Europe	: All components are listed or exempted.
Japan	: <input checked="" type="checkbox"/> Japan inventory (ENCS) : Not determined. Japan inventory (ISHL) : All components are listed or exempted.
Malaysia	: Not determined.
New Zealand	: Not determined.
Philippines	: Not determined.
Republic of Korea	: Not determined.
Taiwan	: All components are listed or exempted.
Thailand	: <input checked="" type="checkbox"/> Not determined.
Turkey	: Not determined.
United States	: All components are listed or exempted.
Viet Nam	: <input checked="" type="checkbox"/> Not determined.

15.2 Chemical safety assessment : This product contains substances for which Chemical Safety Assessments might still be required.

SECTION 16: Other information

Indicates information that has changed from previously issued version.

Abbreviations and acronyms : ATE = Acute Toxicity Estimate
CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
DNEL = Derived No Effect Level
EUH statement = CLP-specific Hazard statement
PNEC = Predicted No Effect Concentration
RRN = REACH Registration Number

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification	Justification
Not classified.	

Full text of abbreviated H statements

XL1-Blue MRF' E.coli Strain H319	Causes serious eye irritation.
SOLR Bacterial Strain H319	Causes serious eye irritation.

Date of issue/Date of revision : 23/08/2018

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SECTION 16: Other information

[Full text of classifications \[CLP/GHS\]](#)

XL1-Blue MRF' E.coli Strain Eye Irrit. 2, H319	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2
SOLR Bacterial Strain Eye Irrit. 2, H319	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2

Date of issue/ Date of revision : 23/08/2018

Date of previous issue : 30/03/2017

Version : 2

[Notice to reader](#)

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